drugs is not a medical problem but a social problem with medical manifestations. To anticipate or expect medicine to provide the answers to the majority let alone all the problems involved is both inappropriate and unrealistic." We readily recognize that the profession has both a medical and a social responsibility where drug abuse is concerned and our continuing study indicates that we should adhere to this position.

I can only conclude that Dr. Morris's letter is prompted by incomplete or inaccurate lay press reports and an incomplete understanding of the policy, positions and activities of the C.M.A. during the last two to three years. In an attempt to correct our obvious inadequate communications to her on this, I have directed that she be provided with a copy of all major statements of The Association on this subject.

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Recurrent urinary infections

To the Editor:

In the investigation reported by Jones *et al*: "Recurrent urinary infections in girls: relation to enuresis" (*Can Med Assoc J* 106: 127, 1972), Table II summarizes the relation between reflux and age at first urethrogram, and shows that of those girls age 7 years and younger 36/64 had reflux, while of those 8 years and over 7/26 had reflux. The authors claim this difference to be statistically significant and the paper reads: "($X^2_{(1)}$ 5.419, 0.01 <P <0.25)". This is probably a misprint for X_1^2 = 5.419, 0.01 <P<0.025. From the same data, I obtain X_1^2 = 6.37 or a corrected X_1^2 = 5.25, neither of which materially changes the P value.

No justification is given for why all the children age 7 and younger were compared with those age 8 or over, rather than making the comparison among other age groups. However when I calculated a series of X^2 values (age 2 and younger with age 3 or over, age 3 and younger with age 4 or over, etc.), I found that significance was reached *only* for the comparison of age 7 years and younger with those age 8 years and over. If enough comparisons are made, one will eventually be found "significant", even though there is no clinical justification.

I also question the conclusion of the authors that this demonstration of statistical significance suggests "diminishing *incidence* of reflux with age among girls with recurrent urinary infection" (italics mine). The voiding urethrogram does not measure incidence but *prevalence,* for this diagnostic procedure is carried out to investigate selected cases of *any age,* where there has been repeated or prolonged urinary tract infection. Regardless of the demonstration or otherwise of the presence of reflux, this investigation cannot determine whether reflux has preceded or followed the onset of infection, nor can it prove a cause and effect relationship.

Table III summarizes maximum bladder capacities for four groups of girls, with each of these four groups subdivided into five age intervals. Because of the differences in numbers for each age sub-group, their mean bladder capacities have been "adjusted" (a better term is "weighted") to give an overall mean for each group. A *t*-test, which compares the difference in the two weighted mean capacities for enuretics and non-enuretics (both with urinary infections) with the standard error of the difference, is shown to be highly significant. An estimate of the standard error of the difference first requires the calculation of the pooled variance, again involving a weighting procedure to allow for the differences in numbers in each age sub-group. Since the 89 patients in the two sub-groups under comparison are subdivided in 10 age sub-groups, this weighting procedure means that the *t*-value should have been tested on 79 degrees of freedom rather than on 87 as shown, even though this again will not materially change the P value.

The motto of all clinical investigators should be: "Consult Your Local Biostatistician!"

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To the Editor:

I shall attempt to answer Dr. Irwin's comments about the paper "Recurrent urinary infections in girls: relation to enuresis" in order:

(1) The value for the chi square is $X^2_{(1)}$ = 5.419 and not 5.25 as Dr. Irwin's calculations indicate

$$\left[\frac{(5.5)^2}{13} + \frac{(5.5)^2}{13} + \frac{(3.5)^2}{32} + \frac{(3.5)^2}{32} = 5.419471\right]$$

Moreover, Yates correction factor was employed in computing this chi square since it is deemed, as I am sure Dr. Irwin will agree, more conservative to introduce this correction when one is claiming significance in a situation where chi square with one degree of freedom is used.

(2) The children were divided into two groups, 7 years and younger on the one hand and 8 years and over on the other, because this is the halfway mark in the age distribution of the children who were included in this study. The reason age would matter in the study of reflux is because of the widely known information that reflux is, among other things, related to age.[1] Having selected this presumably logical cut-off point in age distribution, we did not test the differences among all other conceivable dichotomies for significance.

(3) The use of the term "incidence" which Dr. Irwin would have us change to "prevalence" is perhaps an example *par excellence* of jargon — the last bastion of professionalism. Both terms carry particular connotations to the epidemiologist which were not intended. Perhaps we should have used occurrence — fortunately still a connotation-free word — since we meant just that.

(4) The last substantive point concerns the number of degrees of freedom used in reading the P value for the calculated *t*-value of part of the data in Table III. Whether to use 79 as Dr. Irwin suggests or 87 as we did or indeed 8 (based on the concept that individual observations lost their identity by the statistical procedure employed and the values for the subgroups should be considered as independent observations instead) has been the subject of prolonged and arduous contemplation, with many arguments favouring this, that or the other. But, again, as Dr. Irwin has rightly pointed out the choice of the number of degrees of freedom would not materially alter the P value which continues to indicate high level of significance.

I am all in support of Dr. Irwin's motto for clinical investigators: "Consult Your Local Biostatistician" and in this case we did — myself.

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